in the microarray is essentially free of cross-contamination with DNA sequences applied to the other regions in the microarray.

In claim **8**, delete "1000" and substitute therefor -- 10,000 --.

**17.** (Amended) The substrate of any one of claims 7, 8 or 9, wherein the DNA sequences are selected from the group of polynucleotides consisting of mRNA-derived sequences, [and] genomic DNA sequences and fragments thereof.

Please add claims 18-35 as follows.

-- **18.** The substrate of any one of claims 7, 8 or 9, wherein the microarray comprises 2,500 or more regions. --

-- **19.** The substrate of any one of claims 7, 8, or 9, wherein the microarray comprises 10,000 or more regions. --

-- **20.** The substrate of any one of claims 7, 8, or 9, wherein the DNA sequences are bound directly to the surface of the substrate. --

-- **21.** A substrate with a surface comprising a microarray of DNA sequences, wherein the DNA sequences are polynucleotides, produced by a method comprising the steps of

(a) depositing a selected volume between about 0.002 nl and about 2 nl of a solution comprising a selected, isolated polynucleotide at a discrete region on the surface of the substrate, and

(b) repeating step (a) at other locations on the surface of the substrate until a microarray of 400 or more regions is formed, wherein the regions are at a density between about 62,500 regions/$cm^2$ and about 625 regions/$cm^2$. --

-- **22**. The substrate of claim 21, wherein the density of discrete regions in the microarray is about 10,000 regions/$cm^2$ or more. --

-- **23**. The substrate of claim 21, wherein the density of discrete regions in the microarray is about 2,500 regions/$cm^2$ or more. --

-- **24**. The substrate of claim 21, wherein the substrate is glass. --

-- **25**. The substrate of claim 21, wherein the substrate is non-porous. --

-- **26**. The substrate of claim 21, wherein the surface of the substrate is hydrophobic. --

-- **27**. The substrate of claim 21, wherein the surface of the substrate comprises one or more chemical moieties selected from the group consisting of silyl, hydroxyl, carboxyl, amine, aldehyde, and sulfhydryl. --

-- **28**. The substrate of claim 21, wherein the DNA sequences are bound directly to the surface of the substrate. --

-- **29**. The substrate of claim 21, wherein the DNA sequences are covalently bound to the surface of the substrate. --

-- **30**. The substrate of claim 21, wherein the DNA sequences are non-covalently bound to the surface of the substrate. --

-- **31**. The substrate of claim 21, wherein the DNA sequences are selected from the group of polynucleotides consisting of mRNA-derived sequences, genomic DNA sequences, and fragments thereof. --

-- **32**. The substrate of any one of claims 21, 22 or 23, wherein the microarray comprises 2,500 or more regions. --

-- **33**. The substrate of any one of claims 21, 22, or 23, wherein the microarray comprises 10,000 or more regions. --

-- **34**. A substrate with a surface comprising a microarray of DNA sequences and suitable for analysis of a polynucleotide mixture, wherein (i) the microarray has a density of about 400 or more discrete regions of DNA sequences per $cm^2$ of substrate surface; (ii) each of said regions contains, as an isolated polynucleotide, a characteristic DNA sequence; (iii) the microarray comprises at least 400 regions essentially free of cross-contamination by DNA sequences characteristic of others of said 400 regions, such that the DNA sequences in said regions are selective in hybridizing with corresponding members of said mixture. --

-- **35**. A substrate according to claim 34, wherein the freedom from cross-contamination in said 400 regions is sufficient to permit detection of a two-fold change in the relative abundance of polynucleotides in mixtures subjected to analysis. --